

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A melt phase process for making a polyester polymer melt phase product containing at least 100 ppm antimony based on the weight of the product comprising

adding an antimony-containing catalyst to ~~at the melt phase or raw materials;~~
polycondensing ~~[[a]]~~said melt containing said catalyst in a polycondensation zone; and,

before the It.V. of the melt reaches 0.45 dL/g, continuously polycondensing the melt in the polycondensation zone at a temperature within a range of 265°C to 305°C or at sub-atmospheric pressure or a combination thereof, in each case until the It.V. of the melt reaches at least 0.75 dL/g;

wherein the polyester polymer melt phase product has a b* color of -5 to +5.

2. (original) The process of claim 1, wherein said polyester polymer melt phase product comprises:

(a) a carboxylic acid component comprising at least 60 mole% of the residues of terephthalic acid, derivatives of terephthalic acid, naphthalene-2,6-dicarboxylic acid, derivatives of naphthalene-2,6-dicarboxylic acid, or mixtures thereof, and

(b) a hydroxyl component comprising at least 60 mole% of the residues of ethylene glycol,

based on 100 mole percent of carboxylic acid component residues and 100 mole percent of hydroxyl component residues in the polyester polymer melt phase product.

3. (Currently amended) The process of claim 2, wherein the polyester polymer melt phase product comprises: (a) a carboxylic acid component comprising at least 60 mole% of the residues of terephthalic acid, or-derivates of terephthalic acid, or mixtures thereof, based on 100 mole percent of carboxylic acid component residues in the polyester polymer melt phase product.

4. (Currently amended) The process of claim 3, wherein the polyester polymer melt phase product comprises:

(a) a carboxylic acid component comprising at least 92 mole% of the residues of terephthalic acid, or-derivates of terephthalic acid, or mixtures thereof, and

(b) a hydroxyl component comprising at least 92 mole% of the residues of ethylene glycol,

based on 100 mole percent of carboxylic acid component residues and 100 mole percent of hydroxyl component residues in the polyester polymer melt phase product.

5. (original) The process of claim 1, wherein the polycondensation reaction in the polycondensation zone is conducted in the absence of active catalysts containing titanium.

6. (original) The process of claim 5, wherein the melt phase process is conducted in the absence of added catalyst compounds containing titanium.
7. (Currently amended) The process of claim 6, wherein the polyester polymer melt phase product contains 180 ppm to 500 ppm antimony.
8. (original) The process of claim 1, wherein said polycondensation reaction is conducted for less than 100 minutes in a finishing zone.
9. (original) The process of claim 8, wherein said polycondensation reaction is conducted for 80 minutes or less in a finishing zone.
10. (Currently amended) The process of claim 1, comprising adding a phosphorus-containing compound.
11. (Currently amended) The process of claim 10, wherein the phosphorous-containing compound is added at a molar ratio of P:Sb of ~~at least~~ 0.025:1 to 5.0:1.
12. (original) The process of claim 1, comprising adding bluing toners to the melt phase.
13. (Currently amended) The process of claim 1, wherein said product has an L* color of at least 70.
14. (Currently amended) The process of claim 13, wherein the L* color of the polyester polymer melt phase product is at least 74, and the b* color is ~~between~~ from -5 and to +4.

15. (Currently amended) The process of claim 1, wherein said polycondensation reaction in the polycondensation zone is conducted at a temperature of 280°C to 305°C ~~or more~~.

16. (Currently amended) The process of claim 15, wherein the product has an L* color of at least 76 and the b* color is ~~between~~ from -5 and to +4.

Claims 17 - 39 (Canceled)

40. (Currently amended) A process for making a polyester polymer melt phase product comprising polycondensing a melt in the presence of an antimony-containing catalyst[[
"]], and, before the lt.V. of the melt reaches 0.45 dL/g, continuously polycondensing the melt in atthe polycondensation zone[[]] at a temperature within a range of 265°C to 305°C or at sub-atmospheric pressure or a combination thereof, in each case[["]] to produce a melt phase product, wherein the reaction time of the melt between an lt.V. of 0.45 dL/g to an lt.V. ranging from 0.70 dL/g to 0.90 dL/g is 100 minutes or less[["]], and further wherein the [[]]polyester polymer melt phase product has a b* color of -5 to +5[["]].

41. (Currently amended) The process of claim 40, wherein a pressure applied during said time between an lt.V. of 0.45 dL/g to an lt.V. ranging from 0.70 dL/g to 0.90 dL/g ~~between said range~~ is about 2 mm Hg or less.

42. (Currently amended) The process of claim 40, wherein the polyester polymer melt phase product produced by said process has a b* color ~~within a range of~~ from -5 to +5.

43. (Currently amended) The process of claim 40, wherein the polyester polymer melt phase product has an It.V. of at least 0.75 dL/g.

44. (original) The process of claim 40, wherein the reaction time of the melt between an It.V. of about 0.3 dL/g and an It.V. in the range of 0.70 dL/g to 0.90 dL/g is 100 minutes or less.

45. (Currently amended) The process of claim 40, wherein the reaction time of the melt between an It.V. of 0.45 dL/g to an It.V. ranging from 0.70 dL/g to 0.90 dL/g is 80 minutes or less.

46. (Currently amended) A polyester polymer melt phase product having a degree of crystallinity of at least 25% and an It.V. of at least 0.70 dL/g without solid state polymerizing the polyester polymer melt phase product, said polyester polymer melt phase product comprising antimony residues and having a b* color of -5 to +5 and an L* color of at least 70.

47. (Currently amended) The product of claim 46, wherein the polyester polymer melt phase product is substantially free of titanium residues.

48. (Currently amended) The product of claim 46, wherein the L* color is at least 74.

49. (original) The product of claim 46, wherein the degree of crystallinity is at least 30%.

50. (Currently amended) The product of claim 46, wherein the lt.V. of the polyester polymer melt phase product is at least 0.75 dL/g.

51. (Currently amended) A melt phase process for making a polyester polymer melt phase product comprising

adding an antimony-containing catalyst to ~~the~~ melt phase,
polycondensing the melt containing said catalyst ~~in the melt phase~~, and,
before the lt.V. of the melt reaches 0.45 dL/g, continuously polycondensing the melt in ~~the~~ polycondensation zone ~~at~~ a temperature within a range of 265°C to 305°C or at sub-atmospheric pressure or a combination thereof, in each case until the lt.V. of the melt reaches at least 0.75 dL/g,

wherein the polyester polymer melt phase product has a b* color of -5 to +5.

52. (Currently amended) The process of claim 51, wherein the polyester polymer melt phase product comprises:

(a) a carboxylic acid component comprising at least 60 mole% of the residues of terephthalic acid, ~~or~~ derivatives of terephthalic acid, or mixtures thereof, based on 100 mole percent of carboxylic acid component residues in the polyester polymer melt phase product.

53. (Currently amended) The process of claim 51, wherein the polyester polymer melt phase product comprises:

(a) a carboxylic acid component comprising at least 92 mole% of the residues of terephthalic acid, ~~or~~ derivatives of terephthalic acid, or mixtures thereof, and

(b) a hydroxyl component comprising at least 92 mole% of the residues of ethylene glycol, based on 100 mole percent of carboxylic acid component residues and 100 mole percent of hydroxyl component residues in the polyester polymer melt phase product.

54. (original) The process of claim 51, wherein the polycondensation reaction in the polycondensation zone is conducted in the absence of active catalysts containing titanium.

55. (original) The process of claim 51, wherein the melt phase process is conducted in the absence of added catalyst compounds containing titanium.

56. (Currently amended) The process of claim 55, wherein the polyester polymer melt phase product contains 180 ppm to 500 ppm antimony.

57. (original) The process of claim 51, wherein said polycondensation reaction is conducted for less than 100 minutes in a finishing zone.

58. (original) The process of claim 57, wherein said polycondensation reaction is conducted for 80 minutes or less in a finishing zone.

59. (Currently amended) The process of claim 51, comprising adding a phosphorus-containing compound.

60. (Currently amended) The process of claim 59, wherein the phosphorous-containing compound is added at a molar ratio of P:Sb of ~~at least~~ 0.025:1 to 5.0:1.

61. (original) The process of claim 51, comprising adding bluing toners to the melt phase.

62. (Currently amended) The process of claim 51, wherein said product has an L* color of at least 70.

63. (original) The process of claim 62, wherein the L* color of the melt phase product is at least 74, and the b* color is ~~between~~ from -5 and to +4.

64. (Currently amended) The process of claim 51, wherein said polycondensation reaction in the polycondensation zone is conducted at a temperature of 280°C to 305°C or more.

65. (Currently amended) The process of claim 64, wherein the product has an L* color of at least 76 and the b* color is ~~between~~ from -5 and to +4.

Claims 66 - 77 (Canceled)

78. (New) The product of claim 46, wherein the polyester polymer melt phase product contains less than 5 ppm of titanium.

79. (New) The process of claim 1, wherein said sub-atmospheric pressure ranges from 200 to 0.2 torr.

80. (New) The process of claim 1, wherein said temperature in the polycondensation zone ranges from 270°C to 305°C.

81. (New) The process of claim 40, wherein said temperature in the polycondensation zone ranges from 280°C to 305°C.

82. (New) The process of claim 1, wherein said polyester polymer melt phase product comprises a carboxylic acid component comprising at least 96 mole% of the residues of terephthalic acid based on 100 mole percent of carboxylic acid component residues in the polyester polymer melt phase product.

83. (New) The process of claim 10, wherein said phosphorus-containing compound is added after said antimony-containing catalyst.

84. (New) The process of claim 1, comprising continuously polycondensing the melt until the It.V. of the melt ranges from 0.75 dL/g to 1.2 dL/g.

85. (New) The process of claim 1, wherein said antimony-containing catalyst is added to raw materials.

86. (New) The process of claim 1, wherein, before the It.V. of the melt exceeds 0.20 dL/g, the melt is continuously polycondensed.

87. (New) The process of claim 40, wherein, before the It.V. of the melt exceeds 0.20 dL/g, the melt is continuously polycondensed.

88. (New) The process of claim 51, wherein, before the It.V. of the melt exceeds 0.20 dL/g, the melt is continuously polycondensed.

89 (New) The process of claim 40, wherein said sub-atmospheric pressure ranges from 200 to 0.2 torr.

90. (New) The process of claim 51, wherein said sub-atmospheric pressure ranges from 200 to 0.2 torr.